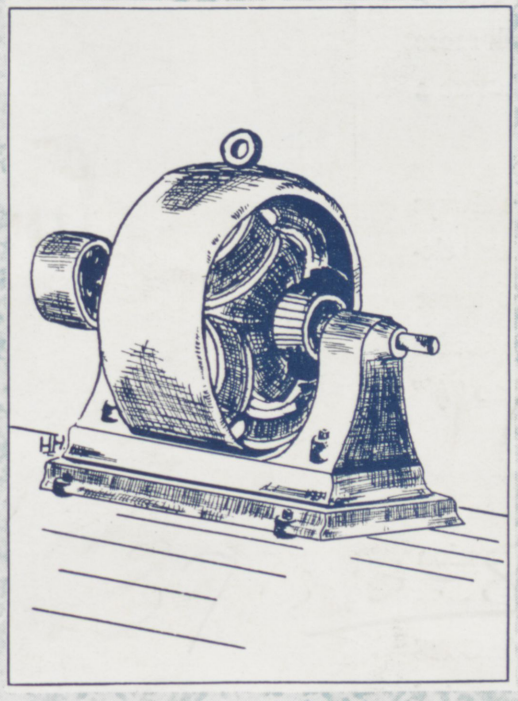
Fall 10-1927

Volume 37 - Issue 1 - October, 1927

Rose Technic Staff
Rose-Hulman Institute of Technology

The Rose TECHNIC

MONTHLY PUBLICATION OF THE STUDENTS
OF ROSE POLYTECHNIC INSTITUTE



OCTOBER
1927

VOL. XXXVII TERRE HAUTE, IND. NO. 1

MEMBER OF ENGINEERING COLLEGE MAGAZINES ASSOCIATED

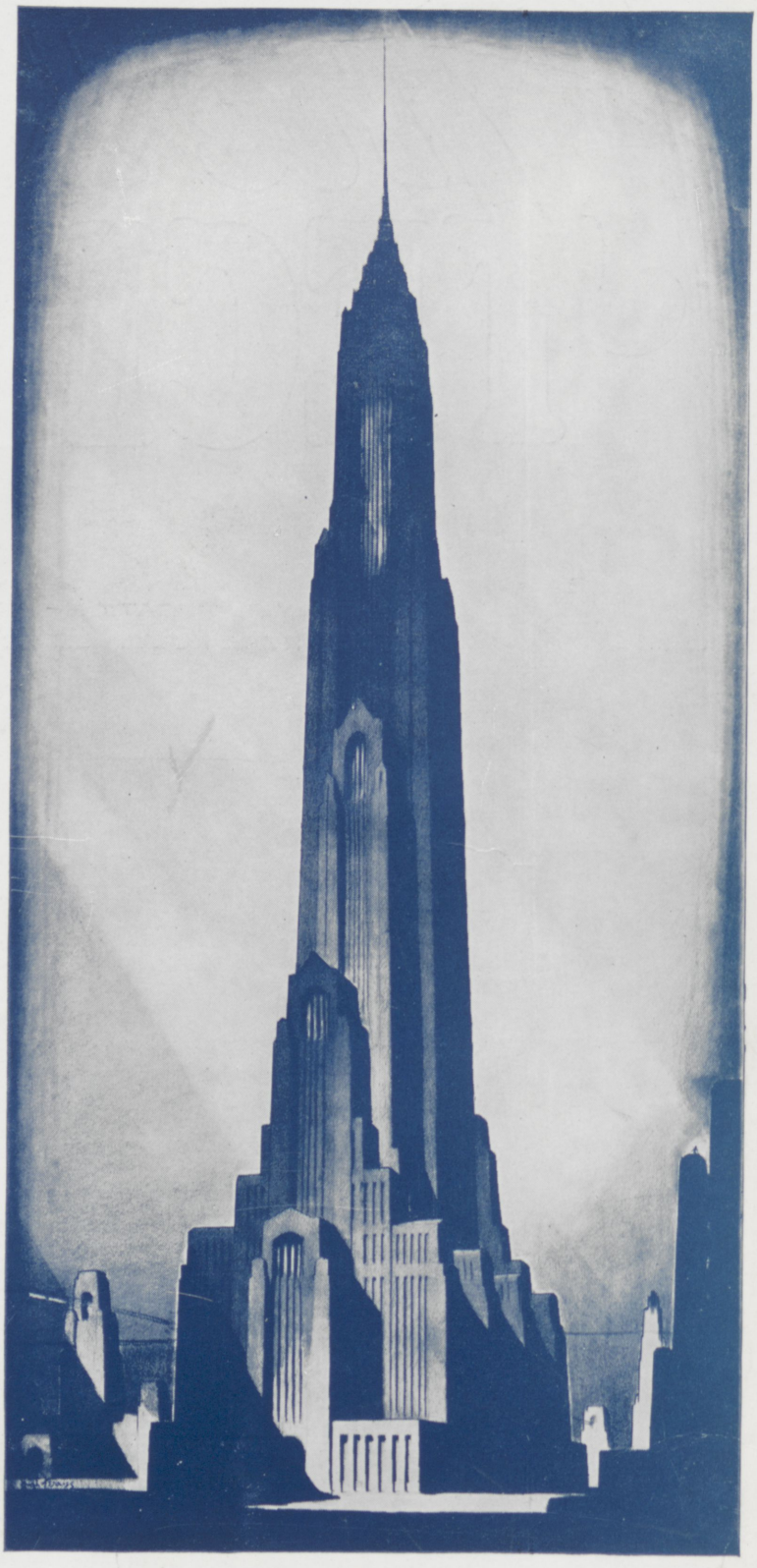
"IF"

AUDACIOUS ENGINEERS are filling our popular publications with descriptions of the cities of the future. We have all seen their prophetic pictures: tiers of gigantic buildings rising one hundred, two hundred, three hundred stories above four or five levels of street.

All the ingenuity of these prophets is required to explain away, even theoretically, certain problems of construction. *IF* this material can be made to bear so much more strain; *IF* means can be devised to ensure a solid foundation—*IF, IF.*

One important detail, however, is always taken for granted. "There will be express elevators," they say, "from the various street levels to the hundredth and two hundredth floor." *THERE WILL BE!* We find no "*if*" in connection with the elevators.

For all builders have come to expect a perfect solution of every interior transportation problem, no matter how audacious. As the cities of the future are being planned, the OTIS COMPANY expects that dependable vertical transportation will continue to be taken for granted by architects, engineers, and the public.



Mr. Hugh Ferriss has visioned many outstanding gigantic "buildings of the future." This reproduction is particularly appropriate at this time and special permission has been granted to use this illustration in college publications.

OTIS ELEVATOR COMPANY

Offices in All Principal Cities of the World

THE ROSE · TECHNIC

PUBLISHED · MONTHLY · BY · THE · STUDENTS · AND · ALUMNI · OF · ROSE · POLYTECHNIC · INSTITUTE · · ·

VOL. XXXVII OCTOBER, 1927 NUMBER 1

TABLE OF CONTENTS

THE STATUS OF AN ENGINEER - - - - - - - - - - - - - 3
J. B. Smith, c., '28
INSPIRATION'S PLANT FOR LEACHING ORE AND ELECTROLYTIC REFINING OF COPPER - - - - - - - - - - - - - - - 4
J. W. Chinn, ch., '30
ROSE PLACES HIGH IN R. O. T. C. COMPETITION AT CAMP CUSTER - 6
Raymond P. Harris, c., '29
EDITORIALS - - - - - - - - - - - - - - - - - - 7
RESEARCH AND PROGRESS - - - - - - - - - - - - - - 9
ALUMNI - - - - - - - - - - - - - - - - - - 11
ATHLETICS - - - - - - - - - - - - - - - - - - 16
FRATERNITIES - - - - - - - - - - - - - - - - - - 18
STANDARDS AND TESTS FOR REAGENTS AND C. P. CHEMICALS - - 19
Morris Guggenheim, ch., '28
HUMOR - - - - - - - - - - - - - - - - - - 22

Subscription, per year, $2.00

Address all communications to THE ROSE TECHNIC, Terre Haute, Indiana.
Entered in the Post-office at Terre Haute as second-class matter, as a monthly during the school year, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized December 13, 1918.

WE WILL never bring disgrace to this, our City, by any act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks. We will fight for the ideals and sacred things of the City, both alone and with many; we will revere and obey the City's laws, and do our best to incite a like respect and reverence in those above us who are prone to annul or set them at naught; we will strive unceasingly to quicken the public's sense of civic duty. Thus in all these things we will transmit this City not only not less, but greater, better and more beautiful than it was transmitted to us.

—Oath of the Athenian Youth.

The Status of an Engineer

By J. B. Smith, e. '28

ABOUT 2,350 years ago, Herodotus, the Greek historian, stood near the banks of the river Nile and looked with awe upon an engineering feat which had been accomplished centuries before. So many centuries before, in fact, that no one knew for certainty, even at that time, just what engineering methods had been used to quarry, transport, and fit together the huge blocks of stone which constitute the Pyramids. It is from the writings of Herodotus that we read the first accurate details of this great engineering project.

Even at the time of the building of the Pyramids, engineering had undoubtedly reached such a high state of development that these structures remain as monuments to the greatest engineering project accomplished until comparatively recent times. While engineering, as we know it today, has not been practised for much more than a century, The engineer can undisputedly lay claim to a profession which had its beginning in the dawn of antiquity.

Civilization has always followed the engineer, and must continue to do so. The civilizations of the ancients was due in large part to the efforts of the engineer. The glory of medieval civilizations rested directly upon the shoulders of the engineer. Today's civilization is due even more to the efforts of modern engineers.

Rome, without engineers to build its walls, aquaducts, sewage systems, magnificent buildings and military roads, would have amounted to little in the ancient world. Medieval empires would hardly have flourished had it not been for the engineer, who built ships, erected castles, and planned and built entire cities. Today, if the engineer were to pass suddenly out of existance, our present highly organized civilization would quickly revert to barbarism. All of our mechanical transportation would come to a standstill, no power would be available, sanitary systems would cease functioning, and in a short time our present elaborate civilization would be on the rocks.

With all of these facts before us, it would seem, since civilization is and always has been dependent upon the engineer to such a large extent, that the engineering profession should, by all rights, hold a high place in the estimation of the world.

That the profession is not held in the high esteem that it should be is a well known fact. The cause of this state of affairs, and its cure, should be of interest to the engineering student, for it is in the student entering the profession that the remedy can lie.

It is important that the engineering student make himself familiar with the status of the profession which he expects to take up. The engineer is to some extent a martyr. He is today creating a vast amount of material wealth—more than all of the other professions together, and yet he is underpaid. The engineer is creating a new world of prosperity, and is receiving little of the credit due him. He has no legal status, and as a result is preyed upon by quacks who call themselves engineers, and have no recourse.

The blame for this condition can be placed on no one but the engineer himself. He has failed to make the people realize the true importance of his work. The public is so accustomed to seeing engineering projects in all stages of construction that they have come to accept them as a mere matter of course. They fail to consider the man behind the job, or the years of preparation and technical study which the engineer has put in to make the project a reality. They fail to realize that it is only through the accumulated knowledge and experiences of engineers through the years which make possible the comforts and conveniences of their every-day life. They do not see the engineer as the great factor that he is in the complex life of today.

Again, the engineering profession lacks harmony within itself. There has been too much strife and lack of organization for the profession to act as a whole. Such organizations as have been accomplished tend to divide the profession into cliques, each striving to its own advantage, rather than all pulling together towards a common goal.

In the political and business worlds, the engineering profession has not carried the weight that its importance justifies. The small importance at which the engineering profession is held when it comes to matters political can be readily pointed out as the reason for the great number of untrained and incompetent men who are not engineers, but hold engineering positions in civil, county, state, and national governmental organizations. Then in in the business world, the engineer, as a professional man, falls down due to his lack of knowledge and training in business methods. In gaining his technical education he received but a smattering of economic and business principles. It has been estimated that only five percent of all commercial and industrial promotional work is done by engineers.

If the present status of the engineering profession is to be raised, it is the duty of engineering students to make themselves acquainted with the weaknesses of the profession and the methods of correcting these weaknesses. As the oncoming engineers, it is upon them that will fall the burden of raising the

(Continued on page 10)

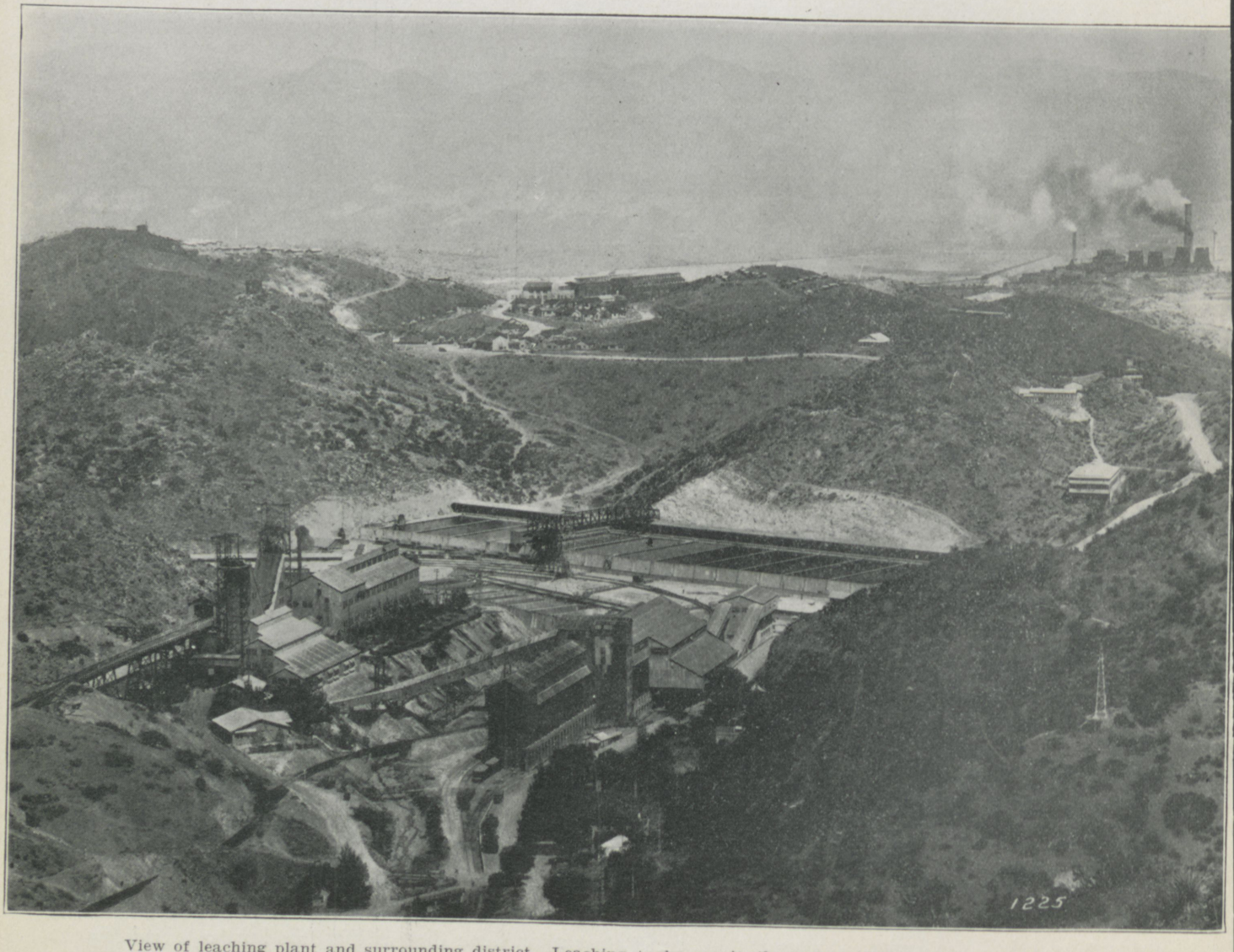
Inspiration Plant for Leaching Ore and Electrolytic Refining of Copper

By J. W. Chinn, ch. '30

THE Inspiration Consolidated Copper Company's $6,000,000 plant, at Inspiration, Arizona, for leaching low grade copper ore and the electrolytic refining of copper from solutions, has a daily capacity of 7,500 tons of ore, or a daily output of approximately 75 tons of electrolytic copper. Operation of the plant was started in October, 1926, and it is the first large plant to use direct leaching without roasting, for copper in sulphide form.

Ore treated at the leaching plant is of an oxide, and mixed sulphide and oxide formation, which is better than one per cent copper, and is mined by a caving method from a body of ore near the plant site.

All ore passes through a coarse crushing plant at the main shaft and is conveyed on belt conveyors to the leaching plant storage bins which have a total capacity of 10,000 tons. At the leaching plant there are twelve main conveyors, varying in width from 24 to 48 inches, which handle the ore as it passes from the storage bins through the screening plant, crushing plant, sampling plant, and on to the leach-

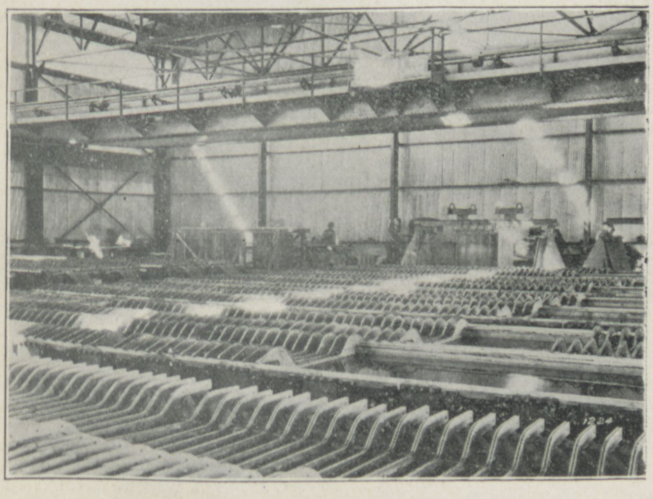


View of leaching plant and surrounding district. Leaching tanks are in the center; storage bins, crushing and screening plant in center foreground; main shaft to left; and the International Smelter in upper right corner.

ing tanks. These conveyors are operated through an electric interlocking system that prevents any conveyor from being operated unless all the conveyors ahead of it are in operation, thus preventing any possible chance of ore stacking up at the junction of any two conveyors.

The part of the plant in which the ore is prepared for leaching, that is the crushing, screening, sampling, spreading in tanks, and the removal of the barren ore, or tailings, from tanks, is operated during two shifts or 16 hours daily; while the other operations, that is the leaching of ore and electrolytic refining of copper from solutions takes place continuously, or 24 hours daily.

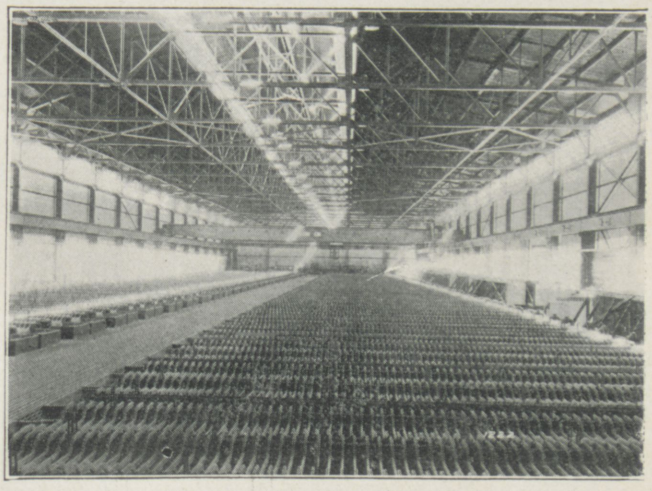
First the ore is conveyed from the storage bins to the screening plant where it is screened on electric screens. That ore which does not pass through the screens is returned to the fine crushing plant, which contains four 24 by 78 in. crushing rolls. As the ore passes from the crushers, it is returned to the screening plant and again screened. Ore which is crushed to the right size, which is about one-quarter inch, passes through the screens and is conveyed to the sampling plant, being weighed while en route. From the sampling plant it is carried on a conveyor which is approximately 1000 ft. long and 36 in. wide from which it is transferred to the conveyor on the spreader bridge, which may be spotted over any one of the thirteen leaching tanks. The spreader bridge has a span of 200 feet and when spreading, the ore moves at a slow speed of nine inches per minute.



View of electrolytic plant commercial tanks, showing lead anodes in place.

After the ore has been leached the tailings are removed from the tanks by an excavator which has a span of 215 feet and, like the spreader bridge, can be spotted and operated over any one of the thirteen leaching tanks. The excavator is equipped with a clam shell bucket of 15 tons capacity in which the tailings are carried to the end of the tank over which it is operating, and loaded in 30 cu. yd., side, air-dump cars, in which they are hauled to the tailing dump.

The thirteen tanks, used in leaching the ore, are constructed of reinforced concrete and each is lead and wood lined, lead being used to protect the concrete from acids used in leaching and the wood being used to protect the lead from ore as it is dumped into, and removed from, tanks.



View of starting sheet section of electrolytic plant, showing in center soluble anodes and to left starting sheets in place.

When a tank is filled to capacity, which is the daily capacity of the plant, a solution of sulphuric acid and ferric sulphate are circulated over the ore for eight days. This soultion is heated in the heating plant to about 57 degrees C. and when put on the ore has a temperature of about 50 degrees C., which aids greatly in the chemical reactions.

The solution containing copper in a soluble form is passed into the commercial tanks in the electrolytic plant where the copper is removed by electrolysis. The tailings are washed several times to remove all acids and soluble copper. To keep the solutions built up sufficiently in ferric sulphate they are passed to "Iron" launders where copper is precipitated out by de-tinned cans, and the copper in this precipitation is recovered by smeltering.

The electrolytic refining plant or tank house is about 100 feet wide by 500 feet long and is equipped with two five-ton gantry cranes. At one end of the tank house is the tank house sub-station where three large motor-generator sets generate the direct current used in electrolysis, and in the other end of the tank house are the starting tanks, in which the starting sheets for the commercial tanks are made.

Soluble anode plates, weighing 900 lbs. each, are cast from blister copper at the International Smelter, at Inspiration, and these plates are placed in the starting tanks. Between the soluble anode plates of blister copper are placed the starting sheet blanks, on which the copper from the anode plates is deposited. The thin sheets of copper removed from the cathode or starting sheets, when built up to the right thickness, are hung from supports between the lead anode plates of the commercial tanks. It is in these tanks that the solutions of soluble copper are circulated. By electrolysis, or the passing of a direct electric current through the solution from the lead anode plates to the cathode plates, the thin copper cathode plates are built up to the desired size. These plates of electrolytic copper are removed from the tanks, washed, weighed, and loaded for shipping.

Rose Places High in R. O. T. C. Competition at Camp Custer

By Raymond P. Harris, c. '29

GRADUATION exercises for the trainees in the reserve officers' training corps were held at Camp Custer Tuesday, July 26, preparatory to the close of camp on July 27. Students from Rose Polytechnic figured prominently in the awards made at the exercises.

The training camp extends over a period of six weeks and is a required course for those men taking the advanced course for a commission in the officers' reserve corps, which is given them upon their graduation from the institute. The camp this year got under way on June 16, when the men were required to report at Camp Custer, Michigan, before midnight.

Intensive Training

The first week was devoted to rifle marksmanship and general organization of the camp. After three days given to instructions in the use of the various slings and practicing the various positions, firing on the range was begun, with record firing as the last event. After the results were determined, it was found that the group from Rose Poly had qualified higher than either the men from the University of Illinois or Cincinnati, the other schools attending this camp. Those men to qualify were: Davis U. Hoffman, who was second for the highest score in all the firing; Ben H. Van Vactor, who was third highest; Jim Goddard and Alexander Babillis. Each year two men are chosen by the commanding officer of the camp to go to the national rifle matches at Camp Perry, Ohio. These men are furnished expenses and have an opportunity to compete with the best shots in the country. The men chosen were both from Rose Polytechnic, Davis U. Hoffman and Ben Van Vactor. They reported for duty on August 20 and shot three weeks preparatory to the week of record shooting during which the R. O. T. C. team of which they were members placed forty third out of one hundred eleven competitors.

After the work on the range the attention of the engineers was given to drills and instructions in bridge building. An exceptional opportunity presented itself when the War department ordered two permament piers built at Eagle Lake, which is on the reservation. This furnished some practical experience which proved very valuable. The piers were first designed by Lieutenant W. W. Bessell. The general layout of the piers was to construct approaches about 60 feet long and then the pier itself was 90 feet long, mounted on the end with two 15-foot diving towers. The plan followed was to sink boxes of the proper size and strength to support the piers. Pilings and boxes were sunk attached into holes already dug for them and then after placing the stringers, the boxes were filled with crushed stone. The piers when finished received special notice from head quarters and the officers and men in the R. O. T. C. were especially commended.

(Swinging Trestle Bend)

Hold Boat Race

The next work in the line of bridges was the school of the pontonier. In connection with this work, in which pontoon boats are used, the annual boat race between the schools represented in the camp was held. The crew from Rose finished second by a half length, losing to the crew from Cincinnati. The race proved to be good sport due to the fact that the pontoon boats weigh 500 pounds apiece. In the Rose crew were Jim Payne, Jim Goddard, Davis Hoffman, George Mason, Alexander Babillis, Raymond P. Harris and Roy D. Reece, coxwain.

In executing the drill used in building a pontoon bridge, two bays of a regular army pontoon bridge were laid in the record time of 13 minutes in an exhibition for a group of prominent reserve officers.

Other instructions at camp were in the use of explosives and demolition work in general. The fougasse, used principally to destroy the morale of advancing troops, probably afforded the most interesting spectacle. Rocks and dirt flying out of the side of a hill to a height of some 100 feet to fall again into the ranks of an imaginary enemy

(Continued on page 19)

EDITORIAL

All Hail to the Freshmen

EACH year there is much discussion about the rule that several colleges respect and which prohibits the playing of freshmen on varsity teams. However, each year it seems that the stand taken by Rose on this matter is vindicated in the proverbial way "every day in every way, just more and more."

This year will find something like seven or eight freshmen taking active parts in the weekly conflicts, doing their stuff just as well as many of the fellows who rate higher in scholastic standings. We find that the freshmen aid us wonderfully, not only this year but that they have in the past two or three years.

This story is written just after the second game of the year, in which Rose tied with Indiana Central. Perhaps what is to be said may be changed somewhat when the "quib" reaches the editor of the Technic, but this goes—some of the outstanding men of the team can be found in the ranks of the freshmen. Looking over the lineup of the starting eleven one can find four freshmen. Looking over the lists of substitutions there can be found three more. Thus, seven of seventeen men playing in the game were freshmen. Aha, there's a point.

We can argue, too

Thus, we may say when our friends argue with us we have had several occasions to do so in the last two years), that we have reason to use the new men. Look what they do for us. They take their places in the lineup for several reasons, not only because they are good enough but because we need them. Rose is a tough school to many, scholastically speaking, and many seasons find a man ineligible although he could take his place if he could rate high enough in the class rooms. So, if we did not have our freshmen there would be actually poorer teams produced to carry on for old Rose and White. We are fortunate that we can use them and don't forget—Heze Clark, our coach, is responsible for our streak of fortune.

Hallowe'en and Rose Tradition

AFTER each outburst of Hallowe'en activity on the part of the Juniors, in recent years, there has been a great deal of talk about "Rose Tradition." Some defend the action of the Junior class on the ground that it is living up to tradition. Others condemn the Juniors on the same grounds. With such a difference of opinion existing in the student body, it might be well to do a little research work to find out the exact nature of the tradition which has been handed down to us.

In looking through the first two or three bound volumes of the Technic in the library, it may be seen that the first Hallowe'en pranks were mild affairs, consisting principally of lifting stray gates and painting the class numerals on convenient fences and sheds, in red paint. By this custom of emblazoning the class numerials in various prominent places, the class of '96 was inspired to use materials more lasting than paint, and as a result, in 1895, the day after Hallowe'en, there was to be seen on the campus a huge boulder with the figures "'96" chiseled deeply into the surface.

That the class of '97 thought the idea a good one may be seen from the following extract from the November, 1895, issue of the Technic:"—two massive blocks of cut limestone on either side of the main gates of the Institute told their own story by the figures "'97" cut on the top of each. The precedent established by the class of '96, a year ago, has been followed in spirit by the class of '97, thus tending to fix it as a custom for the Junior class of each school year to erect some sort of a permenant memorial, in celebration of Hallowe'en."

This precedent rapidly became a custom, for in reading the account of the Hallowe'en affair in the November, 1896, Technic, we note the following: "—the group consisted of members of the class of '98, who had just been to the institute to celebrate the opportunity offered by Hallowe'en, to leave a record of themselves behind, according to the established custom of preceding Junior classes. The record consists, this time, of a plate of bronze, sunk into the vestibule just before the main entrance to the building."

Picking up a volume of the Technic at random, we read that the class of '03 presented to the school a pair of elaborate doors for the front entrance, designed by Herbert W. Foltz, '86. Incidently,

they worked until five o'clock in the morning to hang the doors.

From another volume of Technics taken at random, we see that the class of 1910 installed a water heater, complete showers and regulators. The concluding paragraph of this article says: "The memorials of classes for several years have been of a very commendable nature; that of 1910 is no exception, and it is hoped that those to follow will also be along lines of both service and ornament rather than the latter only."

In the last volume of the Technic to be found on the shelves in the library, the class of 1919, a letter addressed to the Board of Managers is reproduced. The letter says, in part: "In accordance with the time honored custom established by the many classes which have preceded us, it is with much pleasure and the sincerest feelings of loyalty to our school, that we enclose herewith a Liberty Bond of the value of $100.00, which we desire to be used in the purchase of an article to be placed in the new school, and which will be of value to succeeding students and will serve as a memorial to this class." The spirit, it seems, is as traditional as the act.

The Team's All There--- How Are You?

PROSPECTS are good this year in all sports; football, basketball, and so on down the line. There is plenty of material; there are fine conveniences for the athletes to enjoy; there is a hard-working coach who is willing to aid and drive; and there should be more spirit.

Spirit is needed in all lines. In the athletic teams and in the student body there is a distinctive lack of spirit. It is to be assumed usually that a team will develop spirit if there is the impetus from their followers who cheer them on to victory.

The cause can be found in no particular spot. It just isn't there. It has to be developed—and the sooner the better. Years ago, when Rose was rated with the best of them, there was spirit and animation to waste on the part of the student body. But now there isn't enough to go around.

—We are at fault—

What's the trouble? Well, if this writer's opinion is to be respected, it's all in the individual. Most of us are content to let the teams practice and play in their own world, while we prefer to saunter around wondering how the teams are getting along and wondering why there is no pep. We all are at fault, down deep in our hearts.

There is really no need for any discussion as to what will come of this. Surely, the teams will get along, perhaps annex a few more games, get a little publicity, but what happens to our money we pay in to the school for the support of athletics? Yes, it goes along just as well. Next year more can be paid in.

But what will be done? Just whatever we feel inclined to do. IT'S UP TO YOU AND ME.

Rose Athletics in the Future

A ROSE alumnus of about fifteen years ago recently made a few remarks, in a conversation with one of the present students, which contained some interesting facts. Having just witnessed the regular evening football practice, he seemed surprised at the small size of the squad, as compared with that which comprised the Rose teams of fifteen years ago. According to his statement, it was a very common occurrance to have a squad of five teams, each man striving for a place on the varsity. To this factor alone might be attributed much of the success of the Rose teams of that period. It is competition which builds players and teams, and the keener the competition for places on the team, the better the team will be.

If it were possible to get every eligible, and physically fit man in school out for the teams, it would not be very many years before Rose could boast of a team which would cut quite a swath in athletic circles. Such a prospect seems rather remote at present, but it would be possible to achieve an almost similar result by getting every possible freshman out for the teams each year. In this manner an athletic tradition could be gradually built up which would result in harder competition for positions on the various teams, and the correspondingly increased success of Rose teams. If any one doubts that a system such as this will work—look at Notre Dame.

A. S. M. E.

THE first meeting of the R. P. I. branch of the A. S. M. E. was held Wed., Sept. 28, and with Prof. Wischmeyer acting as chairman, officers for the ensuing term were elected. Arthur Keiser was elected as chairman, Carl Ploch as vice chairman, and Kermit Glazner as secretary-treasurer. A program committee composed of Hylton (chairman), Hutchinson, and Cliff was appointed by the chairman to select suitable programs for the future meetings of the A. S. M. E.

A. S. C. E.

AT the first meeting of the R. P. I. branch of the A. S. C. E., held on Sept. 28, for the purpose of electing officers for the coming year, R. Harris was elected president, A. Nehf for vice-president, and R. Alexander for secretary and treasurer. A program committee was appointed and plans discusesd for the activities of the coming year.

R. O. T. C. REPARTEE

Freshman: "Sir, I have neither pencil nor paper."
Major: "What would you think of a soldier who went to battle without rifle or amunition?"
Freshman: "I would think he was an officer."

Uneasy is the tooth that wears a crown.

Published Monthly by the Students of the Rose Polytechic Institute

The Rose TECHNIC

A Magazine Pertaining to Engineering and Allied Sciences

Member of Engineering College Magazines Associated

Research and Progress

Conducted by M. Heinig, ch., '28

Steel For Ball Room of Apartment Hotel Erected by Welding

THE prediction of the United States Bureau of Standards, that noiseless erection of structural steel would come about, has been recently verified. Steel for a new ball room (2850 sq. ft.) on the roof of the fashionable Alcazar Hotel of Cleveland, Ohio, was erected without the driving of a single rivet. The "Stable Arc" welding process was employed.

The use of welding for the erection was decided on for two reasons. First—Connection on the new addition to the old welding could be done with a minimum of disturbance to the existing walls. Second—Lack of noise of riveting was highly desirable.

Considerable discussion has been going on among structural engineers regarding the possible economies of welded construction as compared with riveted construction. In many cases these discussions fail to touch on the question of how much it costs to create a deafening racket with riveting guns. In the case of hospital additions, the prevention of such a disturbance is at a premium. The value of noiseless erection is demonstrated by the fact that the Health Department of New York City is making a serious study of the process in order to eliminate the noise of riveting guns as a health measure.

The Exponential Horn

To-day, with the rapid improvement of low-frequency amplifiers and the present standards of broadcasting high-quality transmission from the better broadcasting stations, there is an increasing demand for loudspeakers that will reproduce with equal efficiency all the notes of the musical scale.

A reproducer does not amplify energy, strange as this may seem. It, together with the pressure chamber in front of the diaphragm of the reproducer unit, merely enables the diaphragm to obtain a grip on the air around it. This is true of the horn-type loudspeaker. The horn is supposed to load the diaphragm and to facilitate the useful conversion of energy to a vibrating air column. If this loading is not uniform for all frequencies, two effects result —either a decrease in the amplitude of the sounds transmitted with decreasing frequency, or a predominance of certain notes over others, due to resonance.

The first of these effects is present in the straight conical horn; it reproduces the low tones poorly or not at all. It reproduces the middle frequencies better, and the high frequencies best of all. This is a condition not to be desired, for the lower frequencies are the most difficult to bring through the reproducer, while the high frequency notes, such as the whines, whistles and other disturbing noises, are usually easy to bring through.

The exponential horn, on the other hand, has the peculiar characteristic of radiating all frequencies uniformly down to the point where no radiation takes place. This cut-off point is determined by the length of the horn; the longer the horn the lower are the frequencies that may be transmitted.

It will be noticed that the growth of the horn of uniform taper is almost negligible, while the exponential horn based upon the law of organic growth, not only rapidly increases in size, but is a thing of beauty. It increases according to the law of compound interest; it follows the taper of the morning glory flower of the exponential curve. When this horn is used with a good type of reproducing unit, it will give truer reproduction than probably any other shape of sound chamber or loudspeaking unit.

Windmill Power

"The cost of windmill-generated electricity, either for small lighting or for small power purposes, is quite reasonable and such as to justify a wider use." This quotation is from "A Report on the Use of Windmills for the Generation of Electricity," rend-

ered by the Institute of Agricultural Engineering of Oxford, England.

The Institute of Agricultural Engineering at Oxford has been making some unusually exhaustive tests on a number of commercial windmill power generating outfits suitable for farms and similar purposes. No American makes were tested, as far as the report indicated, but the question should be equally applicable to America, even if certain economic and technical conditions differ in the two countries.

New Element Obtained in Pure Form

Rhenium, the element whose discovery was recently announced by Doctors Walter and Ida Noddack, has now been obtained in a pure form. The first discovery was based upon the finding of the characteristic lines in the X-ray spectrum as detected by photographic plates. Now the Noddacks have succeeded in obtaining, after a long and difficult refining process, a small quantity of the element itself. It is described as a black powder of high melting point, that readily unites with a number of other elements. In an atmosphere of pure oxygen it ignites forming a white powder of the oxide. The quantity so far obtained is very small, only two milligrams, or seven one-hundred thousands of an ounce. The experimentors are now at work to elaborate more of it which will permit of exact quantitative chemical examination.

New Inside-Frosted Electric Light Bulbs

For many years lamp engineers realized that a lamp frosted on the inside, instead of on the outside, would be very desirable. It would not only present a smooth exterior and be as easily cleaned as a clear lamp, but a lighter frosting would suffice, increasing the efficiency. The trouble with the idea was that when the bulb was frosted on the inside it became as brittle as an egg shell. For twenty years engineers wrestled with this problem to no avail, till Marvin Pipkin of the General Electric solved it—by a very simple method.

A strong solution of acid is first sprayed in the bulb, etching it. In this condition the bulb is very weak, a slight pressure or impact being enough to shatter it. This is due to the fact that the inner surface is made up of irregular little projections with many sharp angles. So far the process is similar to former attempts at inside frosting. The difference lies in the method of strengthening, which is the application of another acid solution, somewhat weaker than the first. This second treatment rounds off the sharp projections, giving the glass an appearance under the microscope of being made up of tiny hemispheres. The bulb is now as strong as it was originally.

Diffusion of the light by the inside frost is obtainable by prismatic refraction with comparatively little loss. The inside frost allows an even greater portion of the light to pass through than does a similar frost on the outside of the lamp. This is due to the fact that the multiple internal reflections are not so numerous in the inside frosted lamp because rough interior surface does not reflect any considerable portion of the light back and forth inside the lamp, as happens with the outside frosted lamp. Moreover the relative absorption of the inside frost does not increase so rapidly with the life of the lamp as does that of other diffusion media.

A Pneumatic Hammer With A 1.5-Ton Tup

Up until a short time ago, a tup weight of 1300 lbs. was considered the limit attainable with pneumatic hammers; now two hammers have been put on the market, almost at the same time, whose tups have the weight of 1.5 tons, viz. an English hammer by Messrs. B. & S. Massey, Ltd. in Manchester and a German hammer built by the Eumuco Co. near Köln.

The output of the English hammer is not mentioned in the current literature, but the end speed of the tup, which determines the blow energy when the tup weight is given, amounts to approximately 20 ft. per sec.; a value found in many foreign hammers. This would give a blow effect 19,500 ft. lbs. per sec. for the English hammer. The same effect is obtained by certain German hammers with a tup weight of 1875 lbs. This small output of the Massey hammer accounts for the low maximum consumption of 75 b. h. p. at 75 blows per min.

The Eumuco hammer with the 1.5-ton tup has a power consumption of 130 b. h. p. corresponding to a considerably higher output of 39,000 ft. lbs. per sec. and its 85 blows per minute. A special feature is the quick acting clutch, which enables the operator to disconnect, at each short interruption in forging, the motor which runs continuously, and thus to reduce to a minimum the unavoidable losses due to the motor running idle. During the intervals, the motor is stopped. These measures increase the economy of the pneumatic hammer.

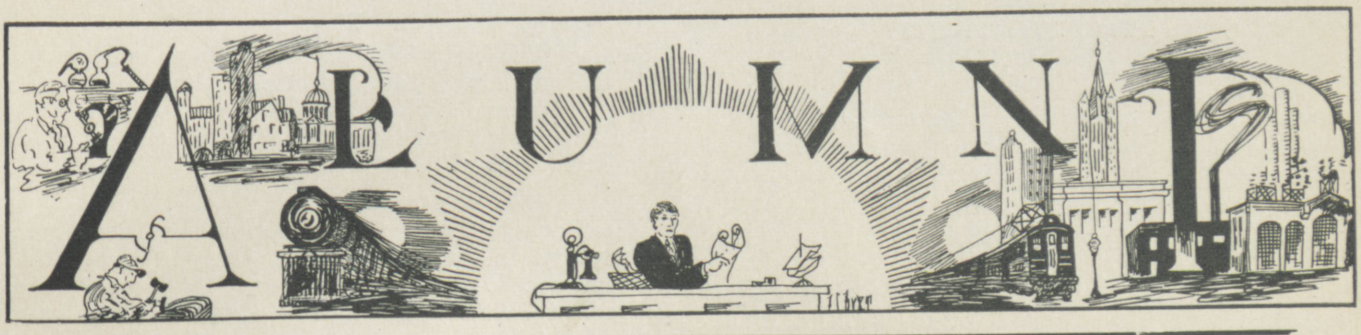
The development of the pneumatic hammers with oscillating air columns has not reached its final stage with tup of 1.5 tons. At the time being, the Eumuco Co. is building a hammer with a tup of 1.5 tons.

The Status of an Engineer

(Continued from page 3)

present low status of the professon. He must be ready to place his profession before the public in its true perspective, and to do this he must know the value of his services. The student should avail himself of every opportunity, both in school and out, to become familiar with business and economic principles, both practical and theoretical. He will find it necessary for engineers to enter politics in order to keep the incompetent and untrained out. Then, lastly, he must look to the human problems which arise from day to day—he must be a human engineer as well as a technical engineer.

It is true that even now, there are engineers who are active in politics, or who are successful business men, or who occupy respected social positions, but these are individuals; until the profession as a whole does the same, the status of the professional engineer will not be raised.



This section is exclusively devoted to news from Rose Tech clubs and items of personal interest to alumni. We might call it an open forum. The principal excuse for its being is that it has started itself. Alumni like to hear about one another—what they are doing—whether they are playing volley ball or golf. Your letter, if it is of general interest, will be published in these columns. Address all communications to the Editor, % The Rose Technic.

Cincinnati Tech Club Meets

ALTHOUGH meetings of the Cincinnati Tech Club are too few and far between, when they do come about they are real meetings. The last was no exception for when last May 21st rolled around there was assembled at the Cincinnati Club, twenty-five loyal Rose men representing fifteen different classes.

The time for this year's gathering was the birthday of our beloved Dr. Mees who met with us again and stirred our hearts as he always does. Unfortunately, another engagement kept President Wagner from attending. However, Professor Wischmeyer represented the Institute in his place and was welcomed both as an alumnus and faculty representative.

J. B. Hunley, '03, President of the Club presided and when he introduced Dr. Mees to us again, the Doctor was forced to talk for a few minutes even though he had been faithfully promised he would not be called upon. Professor Wischmeyer also made a few remarks about the current activities of the Institute.

The speaker of the evening was Arthur M. Hood, '93, who gave out the low down on patents—especially the humorous patents. Needless to say his remarks were enjoyed (hilariously) by everybody.

An impromptu speaker was Dr. Ira Hollis, President Emeritus of Worcester Polytechnic, an old personal friend of Dr. Mees', who happened to be in the building attending an engineering meeting.

The usual election of officers resulted in two of the younger alumni taking over the reigns for a year. William H. Junker, '21, was elected President and S. H. Pittman, '22, Secretary.

The meeting adjourned at a late hour as usual with everybody reluctant to break away from his old acquaintenances at Rose.

A REAL ENGINEERING MENU

Time and Material

Aqua Pura de Crucible
Long Leaf Yellow Pineau Virgin
Tropical Fill
Ball Bearings a la Raceway
Reenforcing Steel and 1:3:5 Mignon
Au Gratin Carbohydrates
Bricks Mortar
Heat Treated Bisqua Slab
Petit Indicator Glazed Briquelles
Ropes au Category
Automatic Starters de Overload Protection

Specifications

Telling People What Its All About
Fred C. Brachman '98
What I Overheard In The Dressing Room of Rose and Poly
Carl Wischmeyer '06
I'll See My Lawyer About This
Arthur M. Hood '93

Dr. Carl Leo Mees
President Emeritus

Present	Year
Dr. Carl Leo Mees	
Prof. Carl Wischmeyer	'06
Arthur M. Hood	'93
C. E. Abbott	'93
Fred C. Brachmann	'98
Fred L. Townley	'00
J. B. Hunley	'03
H. B. Pettit	'03
H. W. Henry	'10
A. A. Piper	'10
A. Dreifus	'12
D. M. Hubbard	'12
C. R. Wallick	'12
Frank H. Wente	'12
W. T. Reddish	'13
D. Levi	'13
H. W. Knox	'17
D. B. Henry	'18
R. F. Abbett	'19
W. H. Junker	'21
S. H. Pittman	'22
O. W. Motz	'25
M. E. Feldstein	'25
E. W. Watkins	'26
F. Swearingen	'26

Alumni Notes

'06

Harry H. Canfield who is a patent engineer and attorney in Cleveland, Ohio, has started to school again. This time he is attending the Cleveland Law School. Mr. Canfield received his E. E. degree from Rose in '11.

'07

Harry H. Orr, who was formerly a signal engineer with the Chicago and Eastern Illinois Railway Company, has been promoted and transferred. Mr. Orr is now the Superintendent of Signals and Telegraph and is located at Danville, Illinois instead of Chicago.

'13

Matthew R. Byers visited the institute during the month of August and was pleased with the new location and buildings. Mr. Byers is the superintendent of the Montana Power Company, located at Lewistown, Montana.

Camille C. Baines of Terre Haute is at present connected with the Peaslee-Gaulbert Company of Louisville, Kentucky.

'14

Claude A. Lyon is now with the Service Caster and Truck Company of Albion, Michigan. His address is 1330 Tribune Tower, Chicago, Illinois. Mr. Lyon was formerly the superintendent of Construction and Service, Regan Safety Device Company, Chicago.

'15

J. R. Sage, Registrar at the Iowa State College at Ames, Iowa, has changed his address to 531 Hayward Avenue.

'17

Frederick W. Hild, winner of the Heminway Medal for his class, and who had received his M. S. degree in '25 died in Columbus on August 13. The cause of Mr. Hild's untimely death is not known. His last visit to the institution was in the early part of August. He had been for some time with the Buffalo Lamp Works, General Electric Company, and was located in Buffalo, New York.

'18

In a letter to Dr. Mees, president emeritus, Lix daCunha disclosed the information that he is no longer with the Companhia Territorial e Constructora as Chief Engineer, but last year left this company to go into partnership with his old friend and classmate Antonio D. de Gouvea. They are engaged in construction work in Campinas, Sao Paulo, and Santos, and are doing very well with several big constructions on hand. Da Cunha is the architect of the firm and Gouvea is taking charge of the commercial part. Mr. da Cunha was retained as technical manager of the Stella Companhia Limitada because the Directors refused to accept his resignation.

At the present time they have under construction a big hospital exclusively for diseases of the eye, mouth, nose and throat. It is to be the largest in South America.

Mr. da Cunha received his B. S. A. E. degree in '18, and Mr. Gouvea received B. S. M. E. degree in '18.

'20

James S. King who was formerly an efficiency engineer with the Campbell Coke plant, Youngstown Sheet and Tube Company, at Youngstown, Ohio, is now with the Central Alloy Steel Corporation at Massillon, Ohio.

'21

Another wandering son has reported to his alma mater, and the whereabouts of Joseph T. Ferrell are known. After not reporting for nearly six years Mr. Ferrell visited the institute on Decoration day. He is connected with the Brooklyn Edison Company, at Brooklyn, New York.

'22

Harold C. Moench was married on August 17 to Miss Mildred Harrod of Terre Haute. Mr. Moench is the Chief Chemist, with the Grasselli Chemical Company at Terre Haute.

'23

Eugene C. Brown connected with the General Electric Company has been transferred from Schenectady to Cleveland.

Robert P. Ryan, a sales engineer with the Marion Steam Shovel Company, was transferred on July 1 from San Francisco to Chicago. Mr. Ryan's address is 1442-1443 Monadnock Block, Chicago, Illinois.

'24

Leo J. Weir is the proud father of a son born August 14 in Hammond. Mr. Weir is with the Northern Indiana Public Service Company at Hammond.

Mr. Leo F. Flaherty is now with Marks and Clerk, Patent Attorneys in Washington, D. C. Mr. Flaherty was formerly connected with the Patent Law Department of the General Electric Company also at Washington.

Harold J. Hood has finished his law course and is now a patent attorney with the firm of Fay, Oberlin and Fay, at Cleveland. Mr. Hood served since graduation as a Junior Patent Examiner, Washington, D. C.

'25

Charles E. Moench is chemist for the American Steel Company of Terre Haute.

Everett C. Gosnell who has been a graduate at Indiana University at Bloomington is now Research Engineer with the Koppers Company of Pittsburgh. He is stationed at Seaboard, New Jersey with the Seaboard By-products Company.

Dan Cupid found another mark when Harold E. Schoonover on July 5 at Speed, Indiana, married. Mr. Schoonover is located at Speed with the Louisville Cement Company.

Peter J. Burt also decided to take the big step, and married Esther Annakin of West Terre Haute. The bride and groom are at home at 4524 Broadway, Louisville, Kentucky.

Phillip A. Minnis, a Junior Engineer with the Potomac Electric Power Company, married Miss Ethel Zartman in Washington, D. C. June 25.

'26

Frank Swearingen with the Kentucky Actuarial Bureau has been transferred from Covington to Owensboro.

Other Rose graduates to take the bonds of matri-

(Continued on page 14)

Alumni Notes

(Continued from page 12)

mony were Chauncey McKee of '18, and Ralph Tapy. Tapy is a Junior Engineer with the Milwaukee Electric Railway and Light Company at Milwaukee, Wisconsin.

'27

Edward Dunning is with the Pierce Petroleum Corporation, St. Louis, Missouri.

Wilbur R. Rogers is with the American Bridge Company at Pencoyd, Pennsylvania.

Fred L. Trautman is a draftsman with the Cooling and Air Conditioning Corporation at Chicago, Illinois.

Fred E. Mischler is with the American Nokol Company of Chicago.

Robert W. Sato is with the Chandler Motor Company of Cleveland, Ohio. Mr. Sato is in the research department.

W. Robert Ferris is engaged in vacuum tube research with the General Electric Company at Schenectady, New York. Mr. Ferris was the winner of the Heminway Medal.

Ernest O. Johnson is a radio test man with the General Electric Company located at Schenectady.

Donald Fenner and William Harris are with the General Electric at Lynn, Massachussetts.

Thomas B. Crutcher Jr. is a draftsman and steel designer with the Northern States Power Company located at Chippewa Falls, Wisconsin.

Baird F. West is with the American Radiator Company at Indianapolis. Mr. West is at present a sales engineer.

John Fairhurst is with the General Electric Company at Schenectady.

David U. Hoffman has joined Rogers at Pencoyd, Pennsylvania with the American Bridge Company.

John B. Wilson is with the Indiana Highway Commission as a Project Engineer and is at present located at Hamlet, Indiana.

ex-'27

Charlie Hunnell has at last taken the big step. He entered into the bonds of matrimony on September 3 when he married Miss Charlotte Ellen of Morristown, Indiana.

Al Kepler has decided to go back to school. He is now enrolled in New York University and may be addressed at 560 Audubon Avenue, New York City.

Class Fight and Games

ON the evening of Sept. 14, the big class fight which every upper-classman at Rose looks forward to from year to year took place in the far-famed hollow on the campus of the school. All afternoon the members of the class of '30, under the able leadership of George Hauer and Milo Dean, who had been elected fight captains at a meeting of the class that morning, scoured the town in search of unwary freshmen. According to reports they managed to secure quite a few of the new men and give them a ride to the country where they were left stranded in various barns and silos to get loose and get back to town as best they could. The fight was due to start sometime between 8 and 9 o'clock and about 7 o'clock cars began to stream out from town bringing fond and anxious parents and friends out to see the famous battle, until a crowd of about 4000 people was gathered around the roped-off space where the fight was to take place. The sophomores had their forces scattered around the enclosure and everyone was anxiously waiting for the freshmen to arrive. About 9:15 the trucks bringing them were heard to arrive and shortly thereafter the mob of freshmen came rushing over the hill and into the enclosure where they were immediately pounced upon by the waiting sophomores and the battle commenced. After 45 minutes of hard fighting the sophomores were seen to be getting the best of it and at 10:15 the last kicking and struggling freshman had been carried to the trucks and they were taken off on a nice, cool ride to be followed by a long, dreary walk home in the wee hours of the morning.

On the Saturday following the class fight the class games were held. These consisted of a canoe-tilt, tug-of-war, speed ball contest, and the big pipe rush. Again the sophomores proved themselves the stronger, winning two of the contests and tieing the third one. The one they lost, the tug-of-war, provided plenty of amusement for the spectators as the hefty freshmen pulled the struggling sophomores through the mud and water of the lake, across which the rope had been stretched. The pipe rush, which was to decide whether the freshmen were to smoke pipes this year, was won by the sophomores, they having 17 hands on the pipe to the freshmen's 12. The speed baby contest was declared a tie and the canoe tilt was easily won by the representatives of the sophomores.

A. I. E. E. Holds Meeting

THE first meeting of the Rose Polytechnic branch of the A. I. E. E. for this school year was held Friday, Sept. 23, and with Counselor C. C. Knipmeyer acting as chairman, officers for the ensuing year were elected. Arthur Drompp was elected chairman and James Payne secretary of this branch of the organization.

A discussion was held upon the feasibility of the electrical department of Rose Polytechnic Institute having an Electrical Show under the auspices of the A. I. E. E. and much enthusiasm was aroused. A committee, composed of Mahan, Kehoe, and Houston of the Senior class, Moench of the Junior class, Ehrenhardt of the Sophomore class, and Roach of the Freshman class, was appointed to investigate and report upon the advisability of this undertaking.

"You look low. Do you feel low?

"Do I feel low? Say! I feel so low today I'd have to raise my voice to greet a snail."

Roger Bacon was thought to be in league with the devil and thrown into prison for his scientific researches which included the development of gunpowder.

Magic— Old and New

A LITTLE less than six hundred years ago, Europe learned of gunpowder. Friar Roger Bacon, the "admirable doctor" of thirteenth-century England, a Franciscan monk who was finally thrown into prison for commerce with Satan, mixed saltpetre, sulphur and charcoal, and made "thunder and lightning" to his own great entertainment and his neighbors' terror. The worthy friar did not put gunpowder to more practical use than magic. It never occurred to him that, confined, the gases from a flash of powder would exert great force that could be applied to many purposes of war and peace. It was not long, however, before someone stripped away the supernatural, and in 1346 firearms are said to have made their appearance, at the battle of Crecy. Equally early, gunpowder must have been applied to blasting purposes.

From this humble and quaint monastic beginning, explosives have steadily increased in use and importance. Chemistry has made one improvement after another. Engineering has found a multiplicity of new uses. Hercoblasting is an example in point.

E. M. Symmes, an explosives chemist of the Hercules Powder Company, devised a new blasting method by which Friar Bacon might have performed real miracles for his gaping contemporaries. It is called Hercoblasting. And it consists of column-loading black blasting powder of special granulation in well-drill holes and firing with Cordeau-Bickford detonating fuse. Where this method is applicable, it has accomplished remarkable results at great savings.

Hercoblasting is only one of the new methods at the command of the explosives engineer. In the list of booklets on the right you will find a wealth of up-to-date, practical information that will be of value to you. Check the ones you want and mail the coupon. They are free.

HERCULES POWDER COMPANY
(INCORPORATED)

941 King Street — Wilmington, Delaware

Sales Offices:

Allentown, Pa.
Birmingham
Buffalo
Chattanooga
Chicago
Denver
Duluth
Hazleton, Pa.
Huntington, W. Va.
Joplin, Mo.
Los Angeles
Louisville
New York City
Norristown, Pa.
Pittsburg, Kan.
Pittsburgh
Pottsville, Pa.
St. Louis
Salt Lake City
San Francisco
Wilkes-Barre
Wilmington, Del.

The scientific research of the Hercules Powder Company in the use of blasting powder gave to the world the modern methods of blasting known as Hercoblasting.

Free Booklets on Effective Blasting Methods

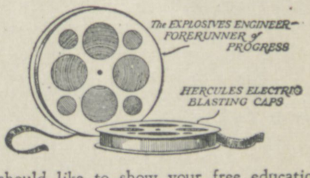
Tear out this coupon and mail it today

HERCULES POWDER CO.,
941 KING STREET,
WILMINGTON, DEL.

Please send me, without charge, the publications checked:

- ☐ HERCULES DETONATORS
- ☐ HERCULES EXPLOSIVES *and* BLASTING SUPPLIES
- ☐ DYNAMITE—THE NEW ALADDIN'S LAMP
- ☐ HERCULES BLASTING MACHINES
- ☐ EFFECT *of* CARTRIDGE DIAMETER *on the* EFFICIENCY *of* EXPLOSIVES
- ☐ HERCULES ELECTRIC BLASTING CAPS
- ☐ DEEP HOLE BLASTING
- ☐ PREVENTING ACCIDENTS *in* MINES *and* QUARRIES
- ☐ A Free Sample Copy of *The Explosives Engineer* Magazine.

Educational Motion Pictures at Your Service



I should like to show your free educational motion picture films in the following size:
{ 16 m.m.
{ 35 m.m.

- ☐ "THE EXPLOSIVES ENGINEER—FORERUNNER *of* PROGRESS" on.....
- ☐ "A MODERN HERCULES" on.....
- ☐ "THE MANUFACTURE *of* ELECTRIC BLASTING CAPS" on.....

Please send me further information.

NAME

ADDRESS

ADDRESS

ATHLETICS

Clarkmen Annex Opening Game

LAST year Rose didn't have much success in football but managed to win their game with Vincennes University by a small score. However, in the first game of this year the Alices were not to be classed with the Engineers and left these parts with the small end of a 44 to 6 count. It was the first game of the year for both outfits, but there was evidence that Rose and Vincennes were not to be compared equally.

The Vincennes men didn't offer much resistance to the Clark crew this year, but there was a reason —Rose seems to be somewhat stronger this fall. The men do their stuff with a will and started to take their Vincennes visitors in better shape than last year, and managed to come out of the struggle with a heap of honors in their possession.

Brilliant was the work of one new Engineer, Harry Wey, who as a freshman and in his first game, bucked the Alice line for a total of four touchdowns. The feature play of the day, however, was made by Captain Jack Derry. Derry's hurdling prowess aided him in this game when he had to jump around in a lively manner to get away from a seething mass of football humanity and run down a Vincennes man who had scooped up a fumble and was running for his goal line, some 50 yards straight ahead. Jack took in after him and with a final leap of desperation brought him down just a foot away from the white mark that would give Vincennes a touchdown. The Alices managed to drag the oval over the line, but Captain Derry's work was a means of delaying the score, at least.

Wey Looked Good

On the whole, Rose work was fine. Wey did some fine crashing through the line, as did others. However, long end runs and well-executed passes contributed many long gains that figured in the large score. Vincennes fought hard at all times, but this was a year that Rose was not to be denied a big victory. Lineup and summary:

Rose (44)		Vincennes (6)
Hauer	L. E.	Slawson
Derry (C.)	L. T.	Combs (C.)
Evans	L. G.	Farrell
Martin, V.	C.	Lind
Bruce	R. G.	House
Ellis	R. T.	Berry
Alexander	R. E.	Walker
Taggart	Q. B.	Buck
Cooley	L. H.	Burkle
Marsh	R. H.	Pickle
Wey	F. B.	Catt

Score by periods:

Rose	6	13	12	13—44
Vincennes U.	0	6	0	0— 6

Substitutions—Rose: Scully, Laatz, Ogan, Hibbens, Trueb, Harvey, Hill, Davy, Schaak, Le., Eldred, Muntz, Adams, Clark. Vincennes U.: Langdon, Edwards, Slinkard, Trowbridge.

Scoring—Touchdowns: Wey (4), Marsh (2), Cooley, Langdon. Points after touchdown: Taggart, Alexander.

Officials—Referee, Vern McMillan; umpire, Vaughn Russel; head linesman, Jack Hanna.

Rose Ties With Indiana Central

Thrilling Game Ends In a Tie of 7 to 7

Indianapolis, Ind., Oct. 1. Rallying in the final period after a dark and dreary third quarter in which dark defeat by a larger score loomed ahead, Rose tied with the Indiana Central eleven at Indianapolis by passing and hitting the line to good advantage. A late spurge of determination enabled the Rose men to cross the goal late in the game and pass behind the line for the point after the touchdown to bring them on even terms with the Indiana Central outfit.

Two strong teams played the game this year, Indiana Central having one of their best teams in the last several years, while Rose seems stronger. While the game was a thriller in several respects, both outfits were guilty of mistakes that will be ironed out as the season advances. However, fumbles, which formed the largest base for criticism, were caused in part by the heavy mud that enveloped the field following a heavy rain storm in the Capitol City.

The teams were evenly matched, and both outfits were forced to do a large amount of punting in order to get ahead. The contest was largely a duel of punts, but occasional flashes of good football gave a tang to the conflict.

Passes were good

The Indiana Central touchdown came in the second quarter when the Ministers began to rally and started a sucessful passing attack. Long passes and short line bucks advanced the ball to the 35-yard line from where Captain Leamme shot a pass to Brenneman who crossed the goal line for the first score of the day. Rose was offside on the play for a point after the touchdown and Indiana Central was out in the lead with a total of seven points.

Rose came back in the last quarter with a will, determined to fight for their honors. The Engineer marker came very much in the same manner that netted their hosts a touchdown. Several long pass plays, punctuated with short line plays, advanced the ball to within 35 yards of the zero mark. Harvey then passed two more good ones to Cooley, the last one putting the ball over. Taggart passed to Alexander over the goal line for the extra point that tied the teams at seven all.

Captain Leamme and Smith worked well for

(Continued on page 20)

Rose Alumni!

Are you preparing for that Home coming Game.

If not, start now.

ROSE
—VS.—
HANOVER

REMEMBER THE DATE

Sat. Nov. 19

Rose Stadium

FRATERNITIES

SIGMA NU NOTES

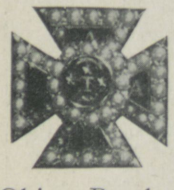
WITH the arrival of Fall the brothers came wandering back to the chapter house for the opening of school. Fate was very kind in that many of the brothers were back among those present. Although the men who graduated last June will no doubt be missed, the spirit in the chapter is running at high tide and much is expected of the gang this year.

Plans are being made for the annual hard-times dance which is given by Beta Upsilon of Sigma Nu every Halloween. The place for the riot this year has not yet been chosen, but most likely the chapter house will be the scene of this ultra-brilliant annual affair. Other social functions are also in the period of infancy, and they, also, will come to materialization with the arrival of the social season.

The various committees have been appointed and the life of the chapter of Sigma Nu is now in full sway for the school year. Elaborate plans are being laid for a big celebration when the homecoming date rolls around. Among other events there will be a banquet and smoker for the old brothers who return, and talks from prominent state officers.

Those brothers who returned to school this year are: John Mendenhall, Bill Houston, Wallace Todd, Valentine Mitch, Bob Thompson, Bob Vendel, Ralph Bailey, Raymond Harris, Galen Clark, Jim Brevoort, Charlie Barbre, Milo Dean, Norman Traub, John Gibbens, Felix Grover, Jack Derry, Duke Holmes, Cuthbert Detrick, Sandy Hill, Bob Marquis, and Dick Wilson.

ALPHA TAU OMEGA



THE opening of the school year found practically all of the brothers back again with the exception of the four seniors who were graduated. Brother Edwin Booth is now located with the Ohio Brass Co. at Mansfield, Ohio. Brother Thomas B. Crutcher is helping construct a hydro-electric plant at Chippewa, Wis. Bill Hammerling is in the Doherty Training School at Denver, Col.

Many of the under-graduates received valuable practical training this summer. Brother Keiser worked for the Worthington Pump and Machinery Works at Cincinnati. The Ohio Public Service Co. claimed the services of three of the brothers, Reed and Kasameyer, who were at Warren, and Carmack at Port Clinton, Ohio. R. Alexander was connected with the Dravo Construction Co. constructing the Pennsylvania Bridge in this city, while Drompp installed new switchboards for the Amer. T. & T. Co.

With the football season in full swing, several of the brothers find themselves very much occupied. Art Drompp is carrying out the football managerial duties in fine style. Bob Alexander is holding down right end on the varsity in a laudable manner, and Pledge Brother Evans, in his first year out for football, is playing a nice game at guard. Trueb is out trying for the quarterback position.

The close of last semester found Alpha Tau Omega in a very enviable position, leading the general social fraternities in scholastic standing. With the exception of Alpha Chi Sigma, professional chemical fraternity, Alpha Tau Omega led not only in the general average but in every class from senior down to freshman. The brothers are justly proud of this record and have already declared their intention to maintain this high scholarship.

During the struggle for a high scholarship, the pleasures of Life will not be overlooked. A well-defined calendar, including the usual Christmas formal, has been drawn up and only awaits carrying out. Last year the frequent "open houses" were such a big success that the same practice of having "open house" at least once a month will be continued. At which times the Taus will gather with their A. T. O. girls.

The chapter welcomes Brothers Bell and Koester and Pledge Brother Kniptash on their return to school.

Brother Carl Dreher, '26, was married on Sept. 26 to Miss Madeline Mooter of this city. Gamma Gamma extends its best wishes to them.

THETA XI

THETA XI starts the new school year with twenty-two active members. Among these are two new faces, Bro. Leo Pellum and Bro. Hiram S. Dorsey, who have been absent for a year. The boys found everything around the house in good shape after the summer. The house looked much improved with a new roof and numerous other repairs. The work is not yet completed, however. A new heating system is being installed, and new furniture has been purchased.

Since the first of the summer we have had as our guest, Bro. Washing of Alpha chapter at Rensselaer Tech, who since graduation has been working in Terre Haute. Bro. Collins returned this fall and is going to work here. We are exceedingly glad to have both brothers with us and hope they will stay all year.

The first social event of the year was held Saturday night, September 24, with a weiner roast at Hulman Lake. The chaperons included Professor and Mrs. R. E. Hutchins, Lieutenant and Mrs. Bessell, and Lieutenant and Mrs. Selee. Most of the brothers were present with their guests. A big fire was built, around which were assembled the guests. After the eats, the old song book was brought forth. Fraternity songs were sung by the active members

(Continued on page 21)

Standards and Tests for Reagents and C. P. Chemicals

A Book Review by Morris Guggenheim, Ch. '28

THIS book, just off the press of the Van Nostrand Co., is a logical compilation of data very important to the chemical and other allied industries. There is no question concerning the need for a book of this type, that gives at one's fingertips the specifications for chemicals that are so widely used.

The expression of C. P. Chemicals has, in the past often had no definite significance, but, as the author states, he has tried to set standards that insure the consumer materials suitable for his work; and to the manufacturer, standards that make the production of his chemical economically profitable on a commercial scale.

A typical discussion gives first the formula and molecular weight of the chemical. Then is given a description of its physical and chemical compound, its uses, precautions to be used in storing, and lastly a table giving the maximum allowable limits of impurities in the reagent grade, followed by tests for the C. P. grade.

The whole material is put up briefly and concisely. Useful percentage composition tables are to be found in the back of the book. A well-organized index completes the volume and this, coupled with the fact that the chemicals are taken up in alphabetical order, makes the finding of desired information, very expedient.

Rose Places High in R. O. T. C. Convention at Camp Custer

(Continued from page 6)

could not but impress the young engineers with the effectiveness of such explosives in war time.

Turn to Athletics

Finally the six weeks neared completion and attention was turned entirely to amusement in the form of athletics. A track meet and swimming regatta were held, not to mention several baseball games throughout the camp period. In the baseball games, Babillis proved to be the mainstay in the R. O. T. C. hurling staff, and Goddard won fame by bowling out a homer with one man on base at a crucial moment in game with a regular army team. Rose Poly men took the lion's share of

(Continued on page 23)

Rose Ties With Indiana Central

(Continued from page 16)

Indiana Central, while Rose had no outstanding men, each doing a part that made the day a success. Bob Laatz, Rose freshman end prospect, received a knee that may keep him from the game for some time. Lineup and summary:

Rose (7)		Indiana Central (7)
Hauer	L. E.	Demmary
Derry (C.)	L. T.	Thompson
Scully	L. G.	Dean
Ogan	C.	Inman
Bruce	R. G.	Hottell
Ellis	R. T.	Vance
Alexander	R. E.	McCormick
Harvey	Q. B.	Leamme
Cooley	L. H.	Bright
Marsh	R. H.	Smith
Wey	F. B.	Brenneman

Score by periods:

Rose	0	0	0	7—7
Indiana Central	0	7	0	0—7

Substitutions—Rose: Evans, Taggart, Laatz, Martin, Schaak, Eldred. Indiana Central: Turner, Reece, Harrison.

Scoring — Touchdowns: Cooley, Brenneman. Points after touchdown: Alexander.

Officials—Referee, Goldsberry, Wabash; umpire, Miller, Carnegie Tech; head linesman, Sidensticker, Wabash.

Football Schedule

For the benefit of our readers other than students the remainder of the football schedule is as follows:

Oct. 15—Evansville at Rose.
Oct. 21—Central Normal at Danville. Ind.
Oct. 29—Eastern Illinois at Charleston, Ill.
Nov. 5—Open.
Nov. 12—Earlham at Richmond, Ind.
Nov. 19—Hanover at Rose.

Fraternities

(Continued from page 18)

of the chapter, accompanied by Bro. Dorsey on his guitar. Bro. Swartz brought forth many laughs with his songs and melodies on his harmonica. As the firelight grew dim the crowd sang "Dear Old Rose," and a most enjoyable party came to an end.

Three of the brothers entered the bonds of matrimony this summer, Brothers Schoonover, Haring, and Haswell. Bro. Schoonover is with the Speed Cement Company, Speed, Indiana; Bro. Haswell is with a construction company in Cincinnati; and Bro. Haring is in Springfield, Ohio.

Bro. Bayfield of Beta chapter, Yale University, was a recent visitor at the house. Also Brothers Kelly, Merrill, Bales, Joslin, Lyons, Haswell, Matson, Rawlings, and Anstead.

The Scotchman who offered a prize to the first person to swim the Atlantic has recently announced that the winner must swim the distance under water.

"Why do the Scotch like basketball?"
"They enjoy the free throws."

Apple: "Why can't flies see?"
Sauce: "Because they leave their specks on the wall."

THE PLASTIC RAGE

She had a young look, but her face fell.

"Bill bought a second hand car this morning."
"He doesn't need a second hand car, and besides I didn't know he worked on the railroad."

Customer: "These eggs aren't fresh."
Grocer: "The boy just brought them in from the country."
Customer: "What country?"

Soph: "Do you know how to keep fish from smelling?"
Fresh: "No."
Soph: "Cut their noses off."

HIGHER MATHEMATICS

Doc Sousley: "In how many ways can six people sit in four seats?"
Fresh: "That's easy. One way. The way nature intended them to sit."

Farmer: "You've got a cold."
Collegiate Tramp: "Yeah."
Farmer: "How did you get it?"
Tramp: "Slept in a field last night and someone left the gate open."

"I have a suit for every day in the week."
"Yes?"
"This is it."

Pell: "I hear the one-piece bathing suit for women is to be done away with at some of the beaches this summer."
Mell: "Got a list of those beaches handy?"

Big Eddie Says:

"It's darkest before the pawn."
"I drank from a fire extinguisher yesterday."
"And how do you feel?"
"Oh, very much put out."

"What made you flunk your Latin course?"
"I wasn't in the proper mood."

Teddy: "So you want to hear a funny noise?"
Bear: "Sure."
Teddy: "Well, let the water run in the bathtub, that will be strange to you."

Reformer: "I must report you for kissing your wife on Sunday."
Young Man: "But this isn't my wife."
Reformer: "Oh, pardon me!"

Junior Partner to Pretty Stenographer: "Are you doing anything on Sunday evening Miss Dale?"
Steno. (hopefully): "No, not a thing."
Junior Partner: "Then try to be at the office earlier on Monday morning, will you?"

Rose Places High in R. O. T. C. Competition

(Continued from page 19)

medals in the track meet and made a fair showing in the swimming meet. In the track meet Jim Goddard tied with an Illinois man for high point honors, Goddard taking three first places, two seconds and two thirds. For this he was awarded a beautiful gold medal at the graduation exercises. In addition to this medals were given for first in the meet. Compiled results of the record of Rose in the meet will be given below.

At the last day of the final demonstration rolled around, and the engineers did their tricks before such notables as Governor Fred Green of Michigan, and Brigadier General William Lassiter of the U. S. A. The chief event of the day was the record construction of a trestle bridge in one minute and twenty seconds. The bridge was then "blown up" for the benefit of the spectators. In reality it was pulled down under a smoke screen, but in such rapid manner that the crowd never realized that it was not blown up after seeing the smoke and hearing the explosion. In the graduation exercises held at the close of the camp, the commanding officer remarked upon the engineering ability of the unit when it could blow up a bridge to smithereens and not harm a timber in it.

Each year there is awarded several general excellency medals to the men in the respective groups who are the most efficient soldiers and participate in the most activities. This year it was decided to award three to Illinois, who had 54 men in camp; one to Cincinnati with 15 men and one to Rose Poly, who had nine men in the camp.

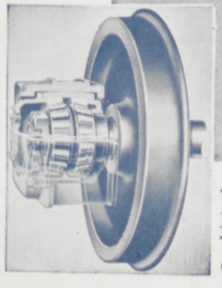
The winner of the general efficiency medal for Rose was James Goddard. Goddard made quite an impressive record in athletics and activities as well.

The entire camp was highly commended this year and declared the most successful camp ever held at Custer. The methods of instruction and the work covered will be studied and modeled after in the following years. Having only nine men, Rose has made a good record instead of being blotted out by the superior number of men from other schools.

The results of Rose men in the track meet are as follows:

100-yard dash—Third, J. F. Payne.
440-yard dash—Second, Goddard, third, Babillis.
220-yard dash—Second, Payne, third, Goddard.
880-yard dash—First, Hoffman; fourth Babillis.
Hop, skip, and jump—First, Goddard.
High jump—Second, Goddard.
Pole vault—First, Goddard.
Broad jump—Third, Goddard.
Javelin throw—Third, Babillis.
Discus—Third, Cash.

Babillis was the only swimmer participating and he placed third in the 50-yard breast stroke, second in the 100-yard free style and third in the 50-yard back stroke.



International Newsreel

Viewing a Timken railroad bearing application on display in the baggage car of the "Pioneer Limited." From left to right: President H. E. Byram of the Milwaukee Road; Mr. H. H. Timken, President of The Timken Roller Bearing Company; Mr. J. T. Gillick, Chief Operating Officer of the railroad; General Passenger Agent W. B. Dixon; and the Engineer of the train, Mr. Nicholas Kaiser

Railroad History in the Making

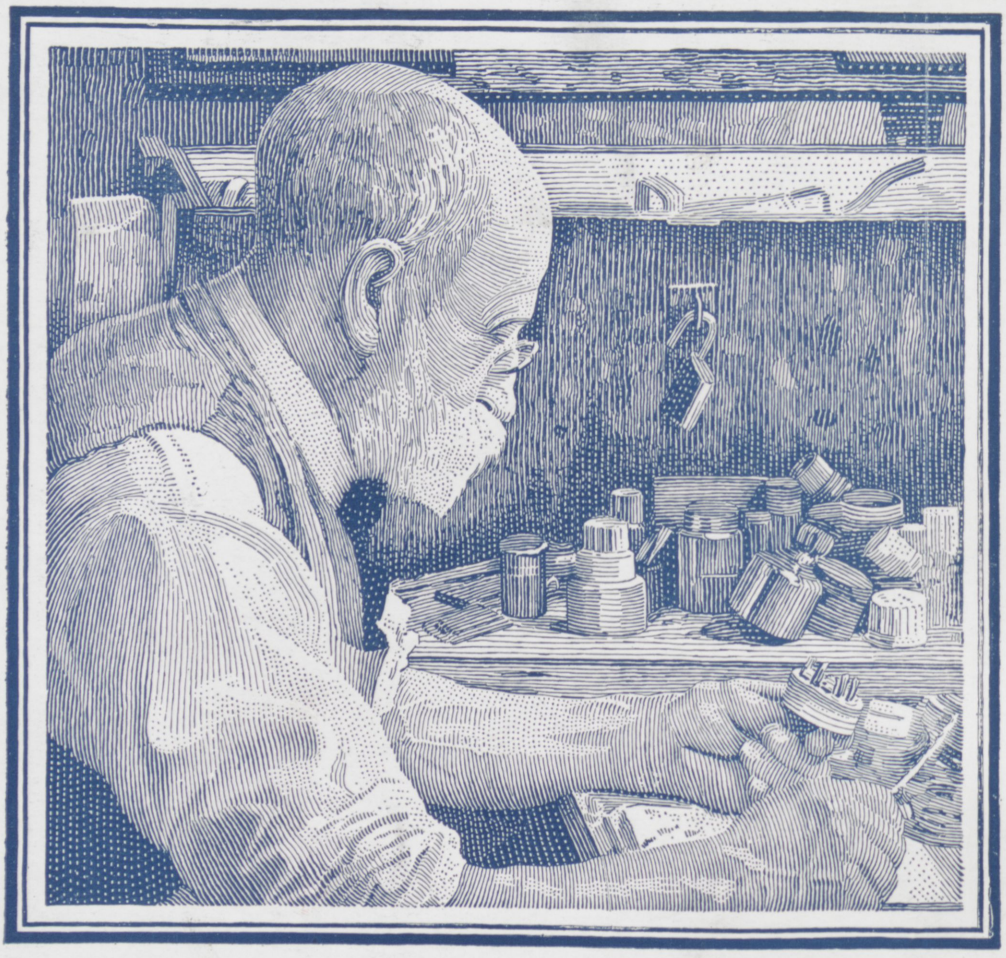
A new epoch in railroad history started when the "Pioneer Limited" and the "Olympian" of the C. M. & St. Paul R. R. entered regular service with every car on Timken Bearings.

Never before, anywhere in the world, have any anti-friction bearings been used throughout any Pullman train. These famous flyers of the Milwaukee Road are destined to make momentous and enduring railroad history.

The 88% reduction in starting load due to friction elimination only begins to express the value of Timken-equipped car journals. Eliminating wear, hot boxes, and by far the greater part of lubrication costs, Timken Bearings with their tapered design, Timken-made Electric Steel and *POSITIVELY ALIGNED ROLLS* have brought a new day in railroading.

As in every other field of engineering, Timken Tapered Roller Bearings are effecting both mechanical and economic improvement. The use of Timken Tapered Roller Bearings has come to be a proof of sound, progressive design. That is why Timkens are of vital concern to all engineers of the future.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO



From a painting, © by Gerrit A. Beneker

Julien Charles Tournier

In the life program of Julien Charles Tournier, public recognition had no part.

He began as an instrument maker in Edison's laboratory. His forty-five years of service to electricity were completed in the same work, at the Schenectady plant of the General Electric Company.

He invented and contributed improvements to switches, sockets, fuse-plugs, and attachment plugs.

He might have retired, had he so chosen, and lived in comfort; but his love for electricity was his life, and he was content.

We publish his picture as a tribute to him and because he typified the thousands of men and women who have dedicated their lives to electrical development.

The world will never know their names. They have no craving to be known. But their devotion is something quite beyond the interest of men in ordinary business. They deal with a power of vast usefulness.

Within the ranks of the General Electric Company are many such men. Their spirit is the best assurance that electricity will year by year find more and better ways to serve.

95-260DH

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, NEW YORK